Vertical Diplopia due to Midbrain Infarction

Naoki Saji¹², Minoru Tanigawa⁹, Yasushi Kita¹ and Koichi Yokono²

Key words: Hess chart, inferior oblique palsy, midbrain infarction, Parks’ three-step test, vertical diplopia

(Intern Med 50: 531-532, 2011)  
(DOI: 10.2169/internalmedicine.50.4687)

¹Department of Neurology, Hyogo Brain and Heart Center at Himeji, Japan, ²Department of General Internal Medicine, Kobe University Graduate School of Medicine, Japan and ³Department of Ophthalmology, Nippon Steel Hirohata Hospital, Japan

Received for publication October 14, 2010; Accepted for publication November 16, 2010
Correspondence to Dr. Naoki Saji, sajink@nifty.com
A 78-year-old woman with hypertension and dyslipidemia developed vertical diplopia and gait disturbance. Neurological examination revealed left-sided partial ptosis, skew deviation, dysarthria, right limb ataxia, and body lateropulsion. Magnetic resonance imaging (MRI) showed a tiny midbrain infarction (Picture 1). Parks’ three-step test and Hess charts (Picture 2) confirmed isolated left inferior oblique palsy. A paramedian lower midbrain infarction can involve decussation of the superior cerebellar peduncles and the partial fascicular oculomotor fibers (1, 2). This case suggests that fibers controlling the inferior oblique and levator palpebrae muscles might in part be located adjacent to the muscles. This mechanism could explain her clinical symptoms.

It is possible that MRI can be used to analyze morphological changes in the brain, but functional change might not be analyzed, whereas ophthalmological assessments by Parks’ three-step test and Hess charts are possible. In cases with vertical diplopia, not only brain MRI but also these ophthalmological methods are useful in detecting ocular motor impairment.

The authors state that they have no Conflict of Interest (COI).

References